

## **I. FORMALITIES**

The Examiner objected to the specification and the drawings. Applicant respectfully submits that the specification and drawings will be corrected as suggested by the Examiner upon receipt of a Notice of Allowance. The reason for not doing so at this time is merely economical.

## **II. INDEFINITENESS REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH**

In the Office Action, the Examiner rejected claim 21 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention. Specifically, the Examiner took issue with the use of the phrase "a subset of contiguous vertices." The Examiner contended that the term contiguous means being in actual contact, touching or connecting throughout, which would imply that the vertices amount to a single point.

Applicant respectfully traverses the rejection of claim 21 based on the definition of "contiguous" provided on page 153 of the Webster's II New Riverside Dictionary, Revised Edition. According to the dictionary, contiguous means "adjacent to; nearby," which are two terms that clearly reject the notion that the recited vertices constitute a single point. For the foregoing reasons, the Applicant respectfully submits that the rejection of claim 21 should be withdrawn.

## **III. PRIOR ART REJECTIONS**

### **A. CUMULATIVE REJECTIONS NOT ALLOWED**

Section 706.02 of the MPEP provides:

"Prior art rejections should ordinarily be confined strictly to the best available art. Exceptions may properly be made, for example, where:

(A) the propriety of a 35 USC 102 or 103 rejection depends on a particular interpretation of a claim;

(B) a claim is met only in terms by a reference which does not disclose the inventive concept involved; or

(C) the most pertinent reference seems likely to be antedated by a 37 CFR 1.131 affidavit or declaration.

Such rejections should be backed up by the best other art rejections available. Merely cumulative rejections, i.e., those which would clearly fall if the primary rejection were not sustained, should be avoided."

Applicant respectfully submits that none of the three exceptions above apply in the present case, and therefore, the cumulative rejections in the Office Action, are not necessary, should have been avoided, and have caused an undue economic burden on the Applicant, who is an individual inventor, by having to reply to numerous, repetitive arguments that should have been avoided according to the MPEP. Even more surprising is the fact that the Examiner continues with this practice even when the Applicant had pointed out in an Amendment filed on November 1, 2000, that only the best available prior art should be used.

**B. ANTICIPATION REJECTIONS UNDER 35 U.S.C. §102**

The Examiner rejected claims 17-23 under 35 U.S.C. §102(b) as being anticipated by Matias et al. (U.S. Patent No. 4,910,772).

As pointed out in the interview with the Examiner (2/12/02), no prior art cited by the Examiner disclosed the method recited in claim 17 to create an encryption key. Matias, while not cited before, is no exception.

Claim 17 requires that an encryption key be created by:

(1) creating a set of vertices, each vertex in the set of vertices being associated with a symbol from said first set of symbols; and

(2) defining a relationship for pairs of vertices in the set of vertices, wherein for each pair the relationship is expressed by a vector originating in one vertex and terminating in another vertex, the vector being associated with a symbol from a second set of symbols comprised of  $S_0$  symbols.

By contrast, in Matias the key stream signal (56) is provided as the output of a pseudo random number generator which is started by a seed number. Col. 7:54-56. Because generating a random number does not amount to "creating a set of vertices" or "defining a relationship for pairs of vertices" as required by claim 17, Matias does not anticipate such claim. Consequently, Matias also does not anticipate claims 18-23.

The Examiner also rejected claims 17-23 under 35 U.S.C. §102(b) as being anticipated by Krishnamurthy. Because the Examiner did not provide a copy of such reference, the Applicant cannot properly respond to any rejection in the Office Action that involves the reference. Most importantly, because that rejection is simply cumulative, the Applicant respectfully requests that the rejection be withdrawn.

A third ground for rejection of claims 17-23 was anticipation under 35 U.S.C. §102(b). The Examiner rejected those claims as being anticipated by Backal (U.S. Patent 6,219,421).

The encryption method in Backal is described in Col.4:52-67. The process is also illustrated in FIG. 4 of that patent. Because none of the steps for generating an encryption key disclosed in either the specification or the drawings of Backal include the steps of "creating a set of vertices" or "defining a relationship for pairs of vertices" as required by claim 17, Backal does not anticipate such claim. Consequently, Backal also does not anticipate claims 18-23.

### **C. OBVIOUSNESS REJECTIONS UNDER 35 U.S.C. §103**

Applicant respectfully submits that the rejection of claims 24-32 is now moot in light of the cancellation of those claims.

The Examiner rejected claim 33 under 35 U.S.C. §103(a) as being unpatentable over Matias in view of Gaines. Because claim 33 recites the specific method for creating an encryption key that is included in claim 17, Matias does not suggest or teach the limitations of

claim 33 for the same reasons that it does not disclose each and every element of claim 17, which were set forth above. Likewise, Gaines fails to disclose the method for creating the key recited in claim 33, namely, generating a key by (1) creating a set of vertices, and (2) defining a relationship for pairs of vertices. Therefore, Gaines fails to cure the deficiencies of Matias.

The Examiner used a fourth ground of rejection in rejecting claims 17-23 under 35 U.S.C. §103(a) as being unpatentable over Bush et al. (U.S. Patent No. 5,245,658) in view of British War Office, Manual of Cryptography ("MC").

Bush defines a key as a pseudo random number. Col.4:56-58. As discussed above, the generation of a random number does not amount to (1) creating a set of vertices, and (2) defining a relationship for pairs of vertices, as required by claim 17.

The MC illustrates a key alphabet on page 93. Because the pairing of a number with a letter according to the MC reference does not amount to (1) creating a set of vertices, and (2) defining a relationship for pairs of vertices, as required by claim 17, the MC reference does not cure the deficiencies of Bush et al. Therefore, the combination of references does not teach or suggest all the limitations of claim 17, and therefore, does not render the claim obvious.

The Examiner maintained the previous rejection of claims 17-33 under Nakamura in view of Gaines. That rejection was addressed in the Examiner's interview. During the interview, it was pointed out by the applicant and by the undersigned agent that the Examiner failed to show that either reference generates a key according to the requirements of claim 17. Further, it was pointed out that Nakamura generates keys with a conventional random number generator.

The reply to our arguments made during the interview and in the amendment after final originally filed on April 11, 2001, simply consists of a statement by the Examiner in paragraph 34 of the Office Action. While the Applicant does not comprehend the meaning of that

paragraph, it seems that the Examiner seems to contend that Nakamura meets the limitations of claim 17 because Nakamura uses an address (33) to create an encryption key. Because "using address to create an encryption key" does not amount to creating an encryption key by (1) creating a set of vertices, and (2) defining a relationship for pairs of vertices, Nakamura does not teach or suggest all the limitations of claim 17. Because Gaines fails to cure the deficiencies of Nakamura, Applicant respectfully submits that the combination of the two references does not render claim 17 obvious.

Regarding claims 18-23, Applicant submits that such claims should be allowed at least by virtue of their dependency from claim 17.

#### **IV. CONCLUSION**

The Applicant has extensively argued that the claims require a particular way of creating an encryption key that has not been taught by the prior art. A lot of time has been spent in drafting amendments and in conducting an Examiner's interview in attempting to bring this point across to the Examiner. Unfortunately, the Examiner does not seem to understand that most of the references cited use a key generated by random bit generators that do not carry out the function recited in the claims (i.e., (1) creating a set of vertices, and (2) defining a relationship for pairs of vertices). Further, the Examiner only dedicated one paragraph in the Office Action to reply to our previously submitted arguments. Still further, not only has the Examiner failed to clarify why he thinks that the prior art systems discussed in office actions previous to the outstanding office action generate keys in the same manner as the claimed invention, but has also misapplied the newly cited prior art to avoid an analysis which focus on how those new references generate encryption keys. The Applicant has cancelled claims 24-32 to reduce the number of prior art issues for examination. Applicant respectfully requests that the issue of key

generation be fully addressed in the next office action, or that the claims be allowed.

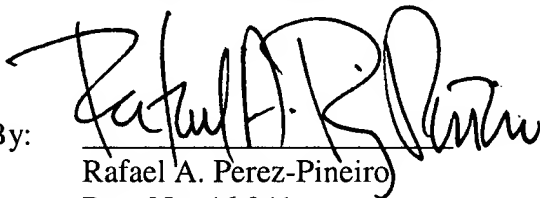
As all grounds of objection and rejection have been addressed and overcome, entry of this Amendment and issuance of a Notice of Allowance of the claims now presented, are respectfully solicited.

In the event there are any questions relating to this Amendment or the application in general, it would be appreciated if the Examiner would telephone the undersigned agent concerning such questions so that prosecution of this application may be expedited. Please charge any shortage or credit any overpayment of fees to Deposit Account No. 23-2185.

In the event that a petition for an extension of time is required to be submitted herewith and in the event that a separate petition does not accompany this response, Applicant hereby petitions under 37 CFR 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized above.

Respectfully Submitted,

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